

WHAT IS CLAIMED IS:

1. A method for assembling a flap system for a gas turbine engine exhaust nozzle including at least one backbone assembly, said method comprising:

providing a basesheet including a pair of circumferentially-spaced sides coupled together by an upstream side and a downstream side

forming at least one relief cut in the basesheet that extends at least partially across the basesheet from at least one of the circumferentially-spaced sides; and

coupling the basesheet to the backbone assembly.

2. A method in accordance with Claim 1 wherein the basesheet includes a flowside and an opposite back side, said forming at least one relief cut in the basesheet further comprises extending the relief cut through the basesheet from the basesheet flowside to the basesheet back side.

3. A method in accordance with Claim 1 wherein forming at least one relief cut in the basesheet further comprises forming at least one relief cut that extends at least partially across the basesheet from each of the circumferentially-spaced sides.

4. A method in accordance with Claim 1 wherein forming at least one relief cut in the basesheet further comprises forming the at least one relief cut in the basesheet to facilitate reducing thermal stresses induced to said basesheet.

5. A method in accordance with Claim 1 wherein forming at least one relief cut in the basesheet further comprises forming the at least one relief cut in the basesheet to facilitate reducing deformation of said basesheet.

6. An assembly for a gas turbine engine exhaust nozzle, said assembly comprising

a backbone; and

a basesheet configured to couple to said backbone, said basesheet comprising at least one relief cut and a pair of circumferentially-spaced sides coupled together by an upstream side and a downstream side, said at least one relief cut from at least one of said circumferentially-spaced sides towards said other respective circumferentially-spaced side.

7. An assembly in accordance with Claim 6 wherein said basesheet further comprises a flowpath side and an opposite back side, said relief cut extends from said flowpath side to said back side.

8. An assembly in accordance with Claim 6 wherein said basesheet has a centerline axis, said at least one relief cut oriented substantially perpendicularly to said centerline axis.

9. An assembly in accordance with Claim 6 wherein said basesheet at least one relief cut further comprises at least one relief cut extending at least partially across said basesheet from each said circumferentially-spaced basesheet side.

10. An assembly in accordance with Claim 6 wherein said basesheet at least one relief cut further comprises a plurality of relief cuts spaced axially between said basesheet upstream and downstream sides.

11. An assembly in accordance with Claim 6 wherein said basesheet at least one relief cut facilitates reducing thermal stresses induced to said basesheet.

12. An assembly in accordance with Claim 6 wherein said basesheet at least one relief cut facilitates reducing deformation of said basesheet.

13. An assembly in accordance with Claim 6 wherein said basesheet upstream side has a first width measured between said circumferentially-spaced sides, said basesheet downstream side has a second width measured between said circumferentially-spaced sides, said first width different than said second width.

14. A gas turbine engine comprising a variable engine exhaust nozzle comprising a flap system coupled to said engine exhaust nozzle, said flap system

comprising a backbone and a basesheet configured to couple to said backbone, said basesheet comprising at least one relief cut and a pair of circumferentially-spaced sides coupled together by an upstream side and a downstream side, said basesheet at least one relief cut extending from at least one of said circumferentially-spaced sides towards said other respective circumferentially-spaced side.

15. A gas turbine engine in accordance with Claim 14 wherein said flap system basesheet comprises a flowpath side and an opposite back side, said at least one basesheet relief cut extending from said flowpath side to said back side.

16. A gas turbine engine in accordance with Claim 15 wherein said said basesheet has a centerline axis, said at least one relief cut oriented substantially perpendicularly to said centerline axis.

17. A gas turbine engine in accordance with Claim 15 wherein said basesheet at least one relief cut further comprises at least one relief cut extending at least partially across said basesheet from each said circumferentially-spaced basesheet side.

18. A gas turbine engine in accordance with Claim 15 wherein said basesheet at least one relief cut further comprises a plurality of axially-spaced relief cuts extending between said basesheet upstream and downstream sides.

19. A gas turbine engine in accordance with Claim 6 wherein said basesheet at least one relief cut facilitates reducing thermal stresses induced to said basesheet during engine operation.

20. A gas turbine engine in accordance with Claim 15 wherein said basesheet at least one relief cut facilitates reducing deformation of said basesheet during engine operation.